



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,905	06/28/2007	David Lavenda	ELG-P-7569/US	8937
56630	7590	04/16/2008	EXAMINER	
EMPK & Shiloh, LLP 116 JOHN ST, SUITE 1201 NEW YORK, NY 10038			SANEL MONA M	
			ART UNIT	PAPER NUMBER
			2882	
			MAIL DATE	DELIVERY MODE
			04/16/2008 PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,905

Applicant(s)

LAVENDA ET AL.

Examiner

MONA M. SANEI

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-36 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/CIS)
Paper No(s)/Mail Date 12/12/07.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because of the following minor informalities: figures 2A and 2B lack reference sign “200” for the schematic block diagram as described on page 10, paragraph 0032, line 2; and also lack the reference sign “222” for the x-ray power supply as described on page 10, paragraph 0032, line 11. Additionally, in figures 2A and 2B, the enclosure of the reference characters in blocks is improper (see 37 CFR 1.84 (p)(1) and (q)). In figures 3-7, each of the separate views requires a separate figure designation. For example, in figure 3 each view requires a separate figure designation such as figure 3A, figure 3B, and figure 3C, and the cross-sectional view of figure 3C as shown in figure 3B requires appropriate designation. It is noted that this correction may require a corresponding correction to the Brief Description of the Drawing. In figure 9, reference character “906” has been used to designate both the gripper and the lower part of the stand.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: on page 2, paragraph 0004, line 12, rewrite "Lead-shielded" in lower case. On page 3 paragraph 0006, line 6, add a period after the word "center". On page 6, paragraph 0022, line 3, add a period after the period after the word "requirements". On page 9, paragraph 0028, replace "generate images static" with -to generate static images-. On page 11, paragraph 0033, line 19, replace "multiple the" with -the multiple-. On page 13, paragraph 0035, line 6, replace "by the an x-ray" with -by the x-ray-. On page 13, paragraph 0035, lines 17 and 18, replace "multiple the" with -the multiple-. On page 13, paragraph 0035, line 24, add a period after "(226)". On page 13, paragraph 0035, line 26, add a period after the word "active". On page 14, paragraph 0036, line 7, replace "prevents" with -prevent-. On page 17, paragraph 0044, line 6, replace "mechanical" with -mechanical means-. On page 17, paragraph 0046, line 5, add a period after the word "leg)". On page 17, paragraph 0047, line 2, replace "interface" with -intensifier-. On page 18, paragraph 0049, line 1, replace "interface" with -intensifier-. On page 20, paragraph 0052, line 8, add replace "indirect" with -indirect conversion detectors-. On page 31, paragraph 0084, last line, add a period after the word "image". On page 33, paragraph 0089, line 9, replace "generate images static" with -to generate static images-. On page 35, paragraph 0095, line 3, replace "operator measure" with -operator to measure-. On page 35, paragraph 0096, line 2,

replace “operator x-ray” with - operator to x-ray- -. On page 36, paragraph 0097, line 8, replace “one the” with - one of the- -. On page 37, paragraph 0097, line 19, replace “optional be” with - optionally be- -. On page 37, paragraph 0099, line 7, replace “hands free” with - hands are free- -. On page 39, paragraph 00102, line 16, add a period after the word “embodiments”.
Appropriate correction is required.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (see page 20, paragraph 0052). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

3. Claim 1 is objected to because of the following informalities: on line 5, the phrase limitation “a digital radiographic frame” should read - the digital radiographic frame- -.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 10, 12, 14, 16, 18-20, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Baba et al. (US 5485500).

Regarding claims 1 and 26, Baba et al. teaches a device and method¹ comprising an x-ray detector (7) adapted to provide a digital radiographic frame (col. 2, line 50; col. 5, line 60 to col.

6, line 9) of a dynamic image (col. 2, lines 49 and 50) of an object (17) under investigation, a position determination subsystem (15) adapted to provide position data associated with the digital radiographic frame, and an image processing controller (11) adapted to combine multiple radiographic frames using the position data associated with each of the radiographic frames and to produce a static image (col. 3, lines 24-34).

Regarding claims 2 and 27, Baba et al. teaches that the controller is capable of producing a dynamic image (col. 2, lines 49 and 50) superimposed over a static image (col. 3, lines 62 and 63; col. 5, lines 48-50).

Regarding claim 10, Baba et al. teaches that the detector comprises an x-ray target (18), such that the x-ray target comprises an x-ray sensitive element adapted to provide the dynamic image (col. 5, lines 33-38).

Regarding claim 12, Baba et al. teaches that the detector comprises a high-resolution semiconductor chip (col. 11, line 60), a flat panel, an image intensifier (col. 4, line 50) or any combination thereof.

Regarding claim 14, Baba et al. teaches that the high-resolution semiconductor chip comprises a CCD (col. 11, line 60), CMOS or a combination thereof.

Regarding claim 16, Baba et al. teaches an x-ray source (3).

Regarding claim 18, Baba et al. teaches a viewing monitor (12).

Regarding claim 19, Baba et al. teaches that the viewing monitor is an on-board monitor or a remote monitor (see figure 1).

¹ The recitation "handheld" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitation are able to stand alone.

Regarding claim 20, Baba et al. teaches to operate in a non-shielded environment (6; col. 3, lines 50-59).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al. as applied to claims 1 and 26 above, and further in view of Barnes et al. (US 20020150215).

Baba et al. teaches a device and method as recited above.

However, Baba et al. fails to teach that the position determination subsystem comprises an inertial navigation system.

Barnes et al. teaches that a position determination subsystem comprises an inertial navigation system (page 3, paragraph 0031).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device and method of Baba et al. such that the position determination subsystem comprises an inertial navigation system as suggested by Barnes et al. since one would have been motivated to make such a modification to provide a detecting means which provides both position and orientation data.

8. Claims 4, 5, 17, 21, 24, 25, 29, 30, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al. as applied to claims 1 and 26 above, and further in view of Rattner (US 6213638).

Regarding claims 4 and 29, Baba et al. teaches a device and method as recited above.

However, Baba et al. fails to teach that the position determination subsystem comprises a receiver adapted to receive a signal from a signal-transmitting element, such that the signal comprises a radio frequency, infra-red, ultrasonic signal or any combination thereof.

Rattner teaches that a position determination subsystem (see figure 1) comprises a receiver (15, 16, or 17) adapted to receive a signal from a signal-transmitting element (14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device and method of Baba et al. such that the position determination subsystem comprises a receiver adapted to receive a signal from a signal-transmitting element as suggested by Rattner since one would have been motivated to make such a modification to provide means of determining the position of an element during operation.

Regarding claims 5 and 30, Rattner teaches that the signal comprises a radio frequency, infra-red (col. 2, line 31), ultrasonic (col. 2, lines 30 and 31) signal, or any combination thereof.

Regarding claims 17, 21, and 35, Baba et al. teaches a device and method as recited above.

However, Baba et al. fails to teach a remote control operation or a foot pedal adapted to operate at least partially.

Rattner teaches a remote control operation (18, 19, or 20) and a foot pedal (19) adapted to operate at least partially.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device and method of Baba et al. to provide remote control operation and a foot pedal as suggested by Feldman since one would have been motivated to

make such a modification to provide operational control at a remote location and to provide a hands-free means of controlling the operation.

Regarding claim 24, Baba et al. teaches a device as recited above.

However, Baba et al. fails to teach a c-arm shaped element.

Rattner teaches a c-arm shaped element (1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device and method of Baba et al. to provide a c-arm shaped element as suggested by Rattner since one would have been motivated to make such a modification to provide a support which holds both the x-ray source and the detector.

Regarding claims 25 and 36, Baba et al. teaches a device and method as recited above.

However, Baba et al. fails to teach a robotic arm.

Rattner teaches a robotic arm (7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device and method of Baba et al. to provide a robotic arm as suggested by Rattner since one would have been motivated to make such a modification to provide mechanical control of the placement of the operational unit.

9. Claims 6-9 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al. as applied to claims 1 and 26 above, and further in view of Itagaki (US 2005/0059902).

Baba et al. teaches a device and method as recited above. Baba et al. further teaches a planar surface (BED, see figure 12) to stabilize the object (17) under examination.

However, Baba et al. fails to teach that the position determination subsystem comprises a cursor located on the lower part of the device that is adapted to output a signal proportional to the relative distance done by the cursor, that the relative distance is measured by mechanical, optical means or a combination thereof, and that the cursor is adapted to move on the planar surface.

Itagaki teaches a position determination subsystem (100) that comprises a cursor (102) that is adapted to output a signal proportional to the relative distance done by the cursor (page 4, paragraph 0092, lines 9 and 10), that the relative distance is measured by mechanical, optical means or a combination thereof (page 4, paragraph 0092, lines 14-17), and that the cursor is adapted to move on the planar surface (1a).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device and method of Baba et al. to provide the position determination subsystem of Itagaki to the lower part of the device of Baba et al. as suggested by Itagaki since one would have been motivated to make such a modification to provide means of determining the position of an element during operation.

10. Claims 11, 15, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al.

Regarding claim 11, Baba et al. teaches a device as recited above. Baba et al. further teaches that the x-ray sensitive element comprises a phosphor screen.

However, Baba et al. fails to teach that the x-ray sensitive element comprises a scintillation screen.

Phosphor and scintillation screens are known to those of ordinary skill in the art for converting x-ray to light and are routinely used in place of one another as a result of their

recognized functional equivalence. Further applicant has not stated that any long standing or stated problem in the art is solved by using a scintillation screen.

Therefore, absent any showing of criticality, it would have been an obvious matter of design choice for one having ordinary skill in the art at the time the invention was made to substitute a scintillation screen for the phosphor screen of Baba et al. since the selection of either of these known equivalents is considered to be within the level of ordinary skill in the art.

Regarding claim 15, Baba et al. teaches a device as recited above. Baba et al. further teaches that the detector comprises an image intensifier.

However, Baba et al. fails to teach that the detector comprises a flat panel that comprises an amorphous silicon-based photo sensor.

Image intensifiers and flat panels are both well known in the art for their use in x-ray image detection. Further applicant has not stated that any long standing or stated problem in the art is solved by using a flat panel that comprises an amorphous silicon-based photo sensor.

Therefore, absent any showing of criticality, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the image intensifier of Baba et al. with a flat panel that comprises an amorphous silicon-based photo sensor since the selection of any of these known equivalents would have been within the level of ordinary skill in the art.

Regarding claims 22 and 23, Baba et al. teaches a device as received above. Baba et al. further teaches an image display unit (12).

However, Baba et al. fails to teach a liquid crystal display that comprises an operation panel.

Liquid crystal displays are well known in the art as display units which shows operation conditions. Further applicant has not stated that any long standing or stated problem in the art is solved by using a liquid display unit.

Therefore, absent any showing of criticality, it would have been obvious to one having ordinary skill in the art at the time the invention was made replace the image display unit of Baba et al. with a liquid crystal display that comprises an operation panel since the selection of any of these known equivalents would have been within the level of ordinary skill in the art.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al. as applied to claim 1 above, and further in view of Hoheisel (US 2003/0010921).

Baba et al. teaches a device as recited above.

However, Baba et al. fails to teach that the detector comprises a selenium-based element.

Hoheisel teaches a detector that comprises a selenium-based element (page 3, paragraph 0032, lines 1-9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Baba et al. such that the detector comprises a selenium-based element as suggested by Hoheisel since it is considered common knowledge in the art to use a selenium-based element as the conversion layer for detecting radiation in digital radiography.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONA M. SANEI whose telephone number is (571)272-8657. The examiner can normally be reached on M-W 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mona M Sanei/
Examiner, Art Unit 2882

/Edward J Glick/
Supervisory Patent Examiner, Art Unit 2882